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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/724,240

12/01/2003

Marvin A. Motsenbocker

Maruta Electric Boatworks

1941

7590

01/07/2005

Marvin Motsenbocker  
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EXAMINER

WAKS, JOSEPH

ART UNIT

PAPER NUMBER

2834

DATE MAILED: 01/07/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/724,240	<b>Applicant(s)</b> MOTSENBOCKER, MARVIN A.	
	<b>Examiner</b> Joseph Waks	<b>Art Unit</b> 2834	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 01 December 2003.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 December 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Information Disclosure Statement***

1. The listing of references in the specification is not a proper information disclosure statement. 37 CFR 1.98(b) requires a list of all patents, publications, or other information submitted for consideration by the Office, and MPEP § 609 A(1) states, "the list may not be incorporated into the specification but must be submitted in a separate paper." Therefore, unless the references have been cited by the examiner on form PTO-892, they have not been considered.

### ***Drawings***

2. The drawings are objected to under 37 CFR 1.83(b) because they are incomplete. 37 CFR 1.83(b) reads as follows:

When the invention consists of an improvement on an old machine the drawing must when possible exhibit, in one or more views, the improved portion itself, disconnected from the old structure, and also in another view, so much only of the old structure as will suffice to show the connection of the invention therewith.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the

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drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Figures 4a-4d that are cited in the Specification are missing.

3. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: 471, 472 and 473. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

#### ***Claim Objections***

4. The numbering of claims is not in accordance with 37 CFR 1.126 which requires the original numbering of the claims to be preserved throughout the prosecution. When claims are canceled, the remaining claims must not be renumbered. When new claims are presented, they must be numbered consecutively beginning with the number next following the highest numbered claims previously presented (whether entered or not).

Misnumbered claims 8-21 has been renumbered as 7-20.

5. Claims 1, 6 and 10 are objected to because of the following informalities:

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In claim 1, line 9; “exerts” should be –exert--.

In claim 6, line 1, “compris” should be –comprise--.

In claim 10, line 1, “claim 10” should be –claim 9--.

In claim 13, line 8, “holds” should be –hold--.

In claim 14, line 1, “claim 14” should be –claim 13--.

In claim 15, line 1, “claim 15” should be –claim 14--.

In claim 16, line 1, “claim 15” should be –claim 14--.

In claim 18, line 1, “claim 18” should be –claim 17--.

In claim 19, line 1, “claim 18” should be –claim 17--.

In claim 20, line 1, “claim 18” should be –claim 17--.

Appropriate correction is required.

***Claim Rejections - 35 USC § 112***

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 1-12, and 17-20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 1, line 11, “one rotating shaft to another rotating shaft” is ambiguous. Examiner suggests –one of said rotating shafts to the other of said rotating shafts--.

In claim 8, “the magnetic field vector”, “the spinning axis vector” lack of antecedent basis, “distance of magnets” and “angle of magnets” are ambiguous examiner suggests –a distance of said magnets-- and –an angle of said magnets-- respectively.

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In claim 17, lines 5-6, “one or more capacitors” is ambiguous examiner suggests --said one or more capacitors--.

In claim 18, line 2, “one or more solid state switches” is ambiguous examiner suggests --said one or more solid-state switches--.

In claim 19, lines 1-2, “at least one capacitive discharge circuit” is ambiguous examiner suggests -- at least one of said capacitive discharge circuits --.

***Claim Rejections - 35 USC § 102***

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

9. Claims 1 and are rejected under 35 U.S.C. 102(b) as being anticipated by Aronoff (US 3,310,693).

Aronoff discloses invention as claimed: a first rotating shaft 50 with a flanged end 33 including magnetically responsive materials 66, 67, a second rotating shaft 51 with a flanged end 32 including permanent magnets 61, 62, and a bearing 40, 41 between the first shaft flanged end and the second shaft flanged end that allows independent rotation of the first and second flanged ends along a common axis wherein the permanent magnets exert a magnetic force that holds the two flanged ends together, thereby transmitting rotating force from one of the rotating shafts to the other rotating shaft.

10. Claim 1 is also rejected under 35 U.S.C. 102(b) as being anticipated by Mabuchi et al. (US 4,754,181).

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Mabuchi et al. disclose invention as claimed: a first rotating shaft (fitted in the boss 6) with a flanged end 1 including magnetically responsive materials 3 a second rotating shaft (fitted in the boss 7) with a flanged end 2 including permanent magnets 4, and a bearing 13, 14 between the first shaft flanged end and the second shaft flanged end that allows independent rotation of the first and second flanged ends along a common axis wherein the permanent magnets exert a magnetic force that holds the two flanged ends together, thereby transmitting rotating force from one of the rotating shafts to the other rotating shaft.

11. Claims 1 and 6 are rejected under 35 U.S.C. 102(b) as being anticipated by Knorr (US 4,115,040).

Knorr discloses in Figure 4 invention as claimed: a first rotating shaft 9 with a flanged end 7' including magnetically responsive materials 1' a second rotating shaft 10 with a flanged end 8' including permanent magnets 2', and a bearing 1, 2' between the first shaft flanged end and the second shaft flanged end that allows independent rotation of the first and second flanged ends along a common axis wherein the permanent magnets exert a magnetic force that holds the two flanged ends together, thereby transmitting rotating force from one of the rotating shafts to the other rotating shaft, wherein the flanges comprise plastic with embedded magnets (See column 3, lines 28, 29).

***Claim Rejections - 35 USC § 103***

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

13. Claims 2-4, 7 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Aronoff (US 3,310,693) in view of Laing (US 3,483,328).

Aronoff discloses the torque converter essentially as claimed. However, Aronoff does not disclose the flanged ends having one or more surfaces facing each other and the one or more permanent magnets being fixed within the at least one flanged end in an orientation that directs one or more magnetic fields across a space into the other flanged end in a non-perpendicular direction to allow magnetic pull that is not perpendicular with the flange surface.

Laing discloses the magnetic torque converter with the flanged ends having surfaces facing each other and the permanent magnets 3 fixed within the flanged ends in an orientation that directs magnetic fields across a space into the other flanged end in a non-perpendicular direction, for the purpose of reducing the loads on the bearings to a minimum thus allowing to exert high pressure on the system.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to design the converter as taught by Aronoff and to provide the flanged ends having surfaces facing each other and the permanent magnets fixed within the flanged ends in an orientation that directs magnetic fields across a space into the other flanged end in a non-perpendicular directions taught by Laing for the purpose of reducing the loads on the bearings to a minimum thus allowing to exert high pressure on the system.

Re claim 3, Laing discloses the non-perpendicular direction range of 0 to 90 degrees that includes the claimed range of 5 to 85 degrees.

Re claims 7 and 13, Lanig's disclosed torque converter is inherently a self-aligning converter. Therefore, for the combined converter the magnetic forces between the flanges will



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be inherently at maximum when the axes of rotation of the flanges are located opposite each other.

14. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Mabuchi et al. (US 4,754,181) in view of Straub et al. (US 3,093,227).

Mabuchi et al. disclose the torque converter essentially as claimed including the more than 50% by area flat plates 1 and 2. However, Mabuchi et al. do not disclose the flat plates positioned within 45 degrees of the perpendicular to the common axis.

Straub et al. disclose the magnetic torque converter having plates facing each other and positioned within 45 degrees of the perpendicular to the common axis (Re column 3, lines 30-32) for the purpose of reducing the axial forces exerted on the bearing by half.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to design the torque converter as taught by Mabuchi et al. and to provide the flat plates with their surfaces facing each other and positioned within 45 degrees of the perpendicular to the common axis as taught by Straub et al. for the purpose of reducing the axial forces exerted on the bearing by half.

15. Claims 8 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Aronoff (US 3,310,693) or Mabuchi et al. (US 4,754,181) in view of Baermann (US 2,886,149).

Both, Aronoff and Mabuchi et al. disclose the torque converter essentially as claimed. However, neither Aronoff nor Mabuchi et al. disclose the magnetic field vector between the flanges being adjusted by altering the distance of magnets from the spinning axis vector, or by angle of magnets with respect to the spinning axis vector, or by dissipation of magnetic field through a magnetic field director, or by addition of a magnetic field.

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Baermann discloses the magnetic torque converter having electromagnets 13 that generates magnetic fields that can be added to or subtracted from the magnetic field at a flanged end 11,12 for the purpose of attracting or separating the flanges when used as a clutch or as braking system.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to design the torque converter as taught by Aronoff or Mabuchi et al. and to provide the electromagnets that generates magnetic fields that can be added to or subtracted from the magnetic field at a flanged end as taught by Baermann for the purpose of attracting or separating the flanges when used as a clutch or as braking system.

16. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Aronoff (US 3,310,693) or Mabuchi et al. (US 4,754,181) in view of Baermann (US 2,886,149) as applied to claim 9 above and further in view of Baker et al. (US 4,734,817).

The combined magnetic torque converter discloses all elements essentially as claimed. However, it does not disclose electromagnet being energized by one or more capacitor discharge circuits controlled by a semiconductor switch.

Baker et al. disclose in Figures 1, 5, 7 and 8 a torque converter having electromagnet 20 being energized by capacitor discharge circuits 106 and 116 controlled by a semiconductor switches 60, 62, 64 for the purpose of storing energy to be provided during power surges required by the control circuit.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to design the combined magnetic torque converter and to provide the electromagnet being energized by one or more capacitor discharge circuits controlled by a

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semiconductor switch as taught by Baker et al. for the purpose of storing energy to be provided during power surges required by the control circuit.

17. Claims 11 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Aronoff (US 3,310,693) or Mabuchi et al. (US 4,754,181) in view of Gentile (US 2,737,145).

The combined magnetic torque converter discloses all elements essentially as claimed. However, it does not disclose the propeller or watercraft propeller being connected to the second rotating shaft.

Both, Aronoff and Mabuchi et al. disclose the torque converter essentially as claimed. However, neither Aronoff nor Mabuchi et al. disclose the

Gentile discloses a powered watercraft, comprising the magnetic torque converter operatively connected between an engine of the watercraft and a propeller for the purpose of eliminating the necessity for an opening in the hull for the propeller shaft, thus assuring the water proof structure of the hull.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the magnetic torque converter as taught by Aronoff and Mabuchi et al. in the watercraft system as taught by Gentile for the purpose of eliminating the necessity for an opening in the hull for the propeller shaft, thus assuring the water proof structure of the hull.

18. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Aronoff (US 3,310,693) in view of Laing (US 3,483,328) as applied to claim 13 above and further in view of Baermann (US 2,886,149).

The combined axial connector discloses all elements essentially as claimed. However, it does not disclose at least one immobile electromagnet.

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Baermann discloses an axial connector having an immobile electromagnet 14 for the purpose of rapid braking of the rotating shaft 2.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to design the combined axial connector and to provide at least one immobile electromagnet as taught by Baermann for the purpose of rapid braking of the rotating shaft.

19. Claims 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Aronoff (US 3,310,693) in view of Laing (US 3,483,328) as applied to claim 13 above and further in view of Baermann (US 2,886,149) as applied to claim 14 above and furthermore in view of Gentile (US 2,737,145).

The combined axial converter discloses all elements essentially as claimed. However, it does not disclose the propeller or watercraft propeller being connected to the second rotating shaft.

Gentile discloses a powered watercraft, comprising the axial converter operatively connected between an engine of the watercraft and a propeller, for the purpose of eliminating the necessity for an opening in the hull for the propeller shaft, thus assuring the water proof structure of the hull.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the combined axial converter in the watercraft system as taught by Gentile for the purpose of eliminating the necessity for an opening in the hull for the propeller shaft, thus assuring the water proof structure of the hull.

20. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Aronoff (US 3,310,693) in view of Laing (US 3,483,328) as applied to claim 13 above and further in view of

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Baermann (US 2,886,149) as applied to claim 14 above and further in view of Baker et al. (US 4,734,817).

The combined magnetic torque converter discloses all elements essentially as claimed. However, it does not disclose electromagnet being energized by one or more capacitor discharge circuits controlled by a semiconductor switch.

Baker et al. disclose in Figures 1, 5, 7 and 8 a torque converter having electromagnet 20 being energized by capacitor discharge circuits 106 and 116 controlled by a semiconductor switches 60, 62, 64 for the purpose of storing energy to be provided during power surges required by the control circuit.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to design the combined magnetic torque converter and to provide the electromagnet being energized by one or more capacitor discharge circuits controlled by a semiconductor switch as taught by Baker et al. for the purpose of storing energy to be provided during power surges required by the control circuit.

21. Claims 17-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Baermann (US 2,886,149) in view of Baker et al. (US 4,734,817).

Baermann discloses a rotating shaft 2 with attached permanent magnets 11 and an immobile electromagnet 14 located near the one or more embedded magnets. However, Baermann does not disclose one or more solid-state switch controlled capacitive discharge circuits, wherein the switches stop or slow the shaft by discharging one or more capacitors into the one or more immobile electromagnets.

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Baker et al. disclose in Figures 1, 5, 7 and 8 a torque converter having electromagnet 20 being energized by capacitor discharge circuits 106 and 116 controlled by a semiconductor switches 60, 62, 64 for the purpose of storing energy to be provided during power surges required by the control circuit.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to design the rapid stop device as taught by Baermann and to provide the electromagnet being energized by one or more capacitor discharge circuits controlled by a semiconductor switch as taught by Baker et al. for the purpose of storing energy to be provided during power surges required by the control circuit.

Re claims 18 and 19, the combined rapid shaft stop device discloses the claimed invention except for the slowing the shaft by at least 90% within 500 milliseconds or discharging a maximum instantaneous pulse of at least 100 amperes at more than 100 volts. It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the claimed performances by sizing the equipment for the expected service, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

22. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Baermann (US 2,886,149) in view of Baker et al. (US 4,734,817) as applied to claim 17 above and further in view of Gentile (US 2,737,145).

The combined axial converter discloses all elements essentially as claimed. However, it does not disclose the propeller or watercraft propeller being connected to the second rotating shaft.

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Gentile discloses a powered watercraft, comprising the axial converter operatively connected between an engine of the watercraft and a propeller, for the purpose of eliminating the necessity for an opening in the hull for the propeller shaft, thus assuring the water proof structure of the hull.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the combined axial converter in the watercraft system as taught by Gentile for the purpose of eliminating the necessity for an opening in the hull for the propeller shaft, thus assuring the water proof structure of the hull.

***Prior Art***

23. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph Waks whose telephone number is (571) 272-2037. The examiner can normally be reached on Monday through Thursday 8 am to 5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Darren E Schuberg can be reached on (571) 272-2044. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read 'J. Waks', is positioned to the left of the printed name.

Joseph Waks  
Primary Examiner  
Art Unit 2834

1/5/04